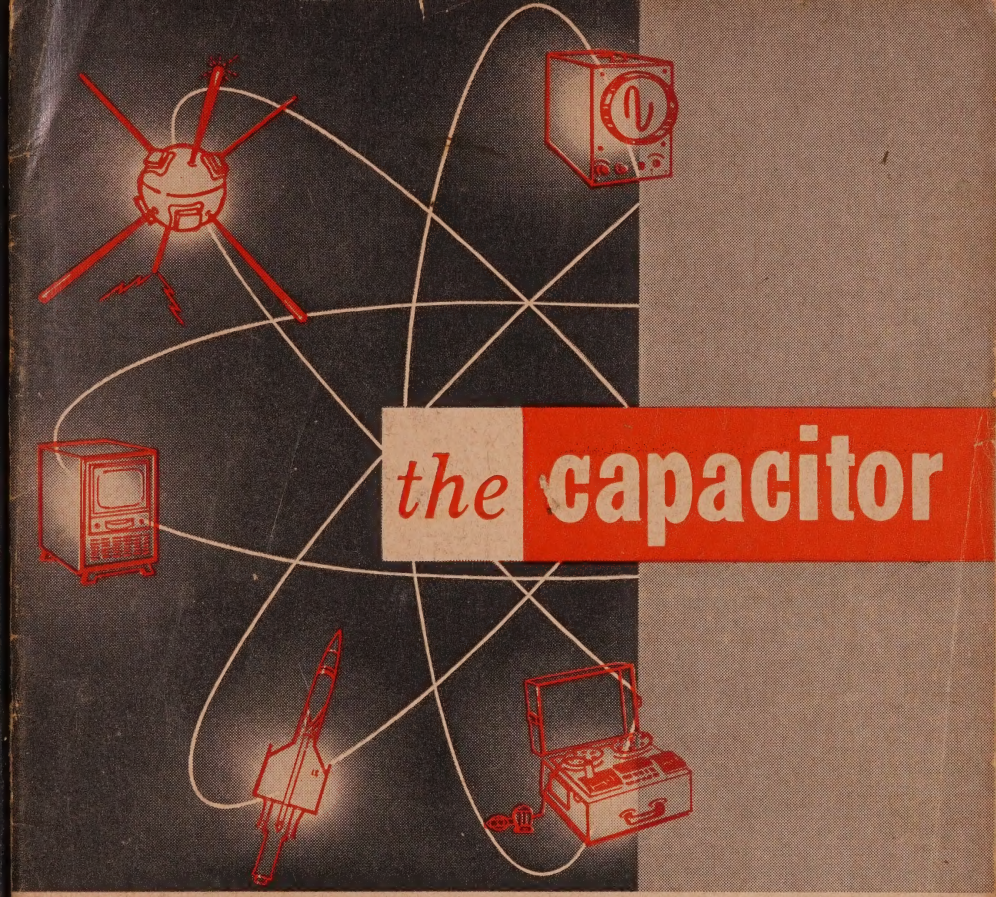

the capacitor

CDE

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FEDERAL PACIFIC ELECTRIC COMPANY
SOUTH PLAINFIELD NEW JERSEY

VOLUME 25 - NO. 4 JULY - AUGUST 1960

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Overall — 1" Dia. x 2¾" Long
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Lug B — 40-80 Mfd. 150 WVDC
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50-30 Mfd.	**80-40 Mfd.**
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CITIZEN'S - BAND TESTER

Class-D Citizen's Band radiophone communication has undergone unprecedented growth during the past year. A number of manufacturers now offer transceivers in either ready-built or kit form to operate on the twenty-two channels (26.96 to 27.23 Mc) in the vicinity of 11 meters.

The presence of such a large amount of active equipment opens up a new area of radio servicing for qualified technicians. On November 15, 1959, the FCC amended the regulations to permit unlicensed persons to test and adjust Class-D Citizen's Band transmitters on the air, provided the transmitter is factory-built or a kit, is controlled by a crystal having 0.005% frequency tolerance, the crystal and crystal oscillator are factory-sealed, and the design of the equipment is such that adjustments normally made will not cause excessive input, overmodulation, or harmonic radiation. In all other situations, the adjustments must be made or supervised by the holder of a professional radio operator's license.

Fig. 1. Completed Citizen's-Band Tester.
(See Figure 3 for identification of components and controls.)

The technician who services this equipment discovers the need for more test instruments of a specialized nature than are encountered in normal radio-tv servicing. For example, field strength and crystal activity must be checked, as well as modulation percentage, voice quality, and carrier shift. Whereas it is possible to hook up miscellaneous test gear to perform any of these tests temporarily in a particular situation, the efficient technician who intends to handle a respectable amount of Citizen's Radio business will need permanent diagnostic equipment.

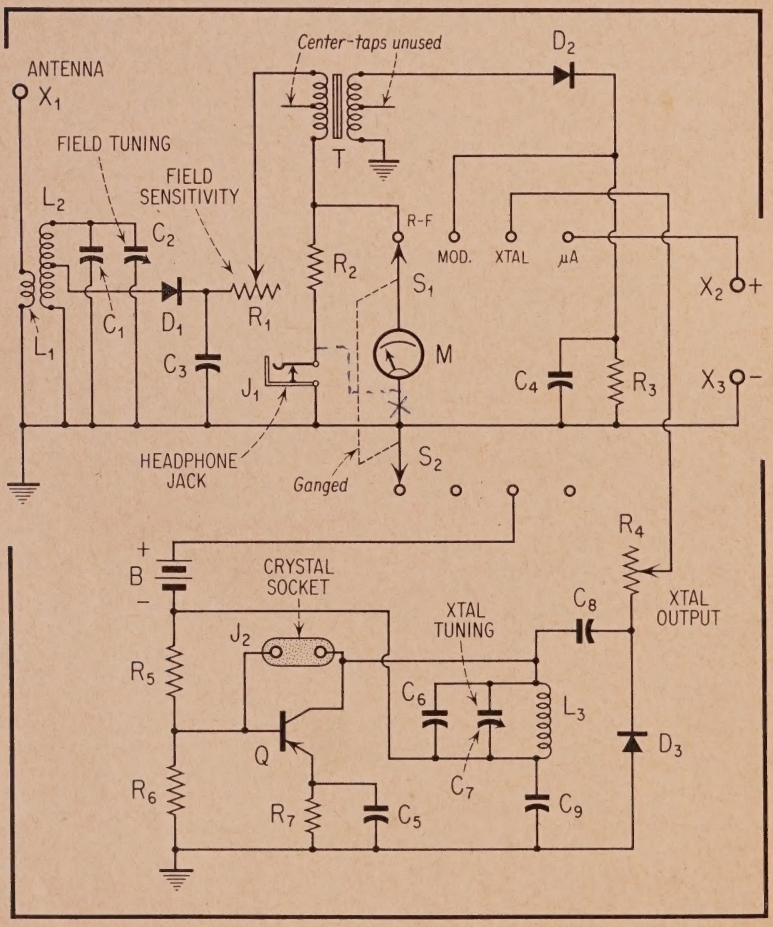

Fig. 2. Complete Circuit of the Citizen's-Band Checker.

It is advisable to combine as many functions as practicable in a single test instrument. And since tests may be made in the field as well as on the shop bench, the instrument should be light and compact for portability.

This article describes a Citizen's-Band checker which has resulted from a serious consideration of requirements and which may be duplicated easily and inexpensively.

Design Objectives

The instrument described checks the following items: (1) transmitter operation, (2) field strength, (3) crystal activity, (4) modulation percentage, (5) carrier shift, and (6) voice quality.

In the development of the checker, there was a strong temptation to include also the functions of a volt-ohm-milliammeter and frequency meter. We decided against this, however, since every serviceman owns a volt-ohm-milliammeter which is entirely portable; and no simple instrument can measure frequency reliably in a high-frequency band which is only 0.27 megacycle wide with an accuracy comparable to that of the transmitter crystal itself which is 0.005 percent.

The instrument circuit was kept simple to avoid difficulty of duplication and unreliability in operation. It employs three diodes, one transistor, and a single miniature battery which gives long service.

Circuit Description

Figure 2 shows the complete circuit of the instrument. The function switch, S_1-S_2, sets the circuit up for its various test functions.

When S_1-S_2 is set to its RF position, the microammeter (M) is connected in series with the detector diode (D_1) and the tuned circuit. The 100-ohm shunt resistor (R_2) converts the microammeter into a 0-1 (approximately) d-c milliammeter. The deflection of the meter is governed by the setting of R_1. The tuned circuit (L_1-L_2-C_1-C_2) is broad in tuning; high selectivity is not required in this application nor is it practicable in a simple tuned circuit for such a narrow band. With S_1-S_2 in this position, the instrument when coupled to a transmitter may be employed as a field strength meter or carrier shift indicator. Or if the meter is removed from the detector circuit by throwing S_1-S_2 to its μA position, headphones may be plugged into Jack J_1 for monitoring voice quality.

If R_1 is adjusted for full-scale deflection of the meter, with S_1-S_2 at RF and the instrument coupled to the transmitter, and S_1-S_2 then is thrown to its MOD position, the meter is connected automatically across Shunt Resistor R_3 and will be deflected by the a-f component of the transmitter signal. Its deflection thus will be proportional to the modulation percentage, and its scale may be calibrated directly in percentage. The miniature 1:1 transformer, T, transmits the a-f component to the audio metering circuit which includes the separate diode, D_2.

When S_1-S_2 is set to its XTAL position, power is switched from Battery B to the transistorized crystal oscillator circuit. With the crystal under test plugged into the crystal socket, J_2, Capacitor C_7 is tuned for peak deflection of the meter. In this circuit, r-f energy developed across the tank circuit when the crystal is in good condition, and coupled through C_8, is recti-

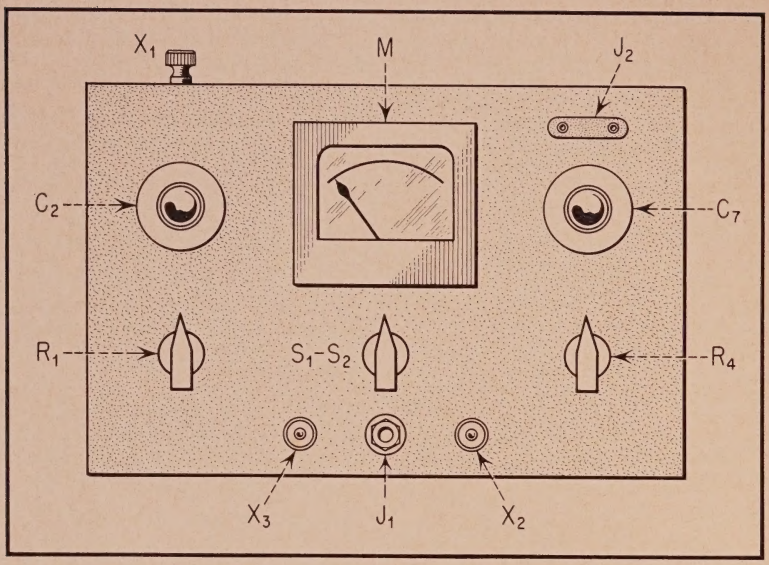

Fig. 3. Details of Front-Panel Layout.

fied by Diode D_3 and applied to the microammeter through Rheostat R_4. Adjustment of R_4 prevents overloading the meter.

Since most technicians building equipment would object, at least to some extent, to monopolizing a sensitive, 0-50 d-c microammeter, means have been provided for making this meter available for external use. When Switch S_1-S_2 is set to its μA position, the meter is connected directly to the binding post terminals X_2 and X_3. This allows the meter to be connected into any desired external circuit such as an ohmmeter, 20,000 ohms-per-volt test meter, null detector, multirange microammeter-milliammeter, etc.

Construction

Because of its simplicity, the checker is straightforward in construction. For shielding purposes, it is built in an aluminum box, 8" long, 6" wide, and 4½" deep (LMB No. 146). Most of the parts are fastened directly to the front panel. Figures 1 and 3 show over-all details.

The coils (L_1, L_2, L_3) are wound with No. 20 enamelled wire on short lengths of ½"-diameter polystyrene tubing. Coil assembly L_1-L_2 is cemented to a small polystyrene subpanel on which Tuning Capacitor C_2 is mounted. The subpanel in turn is held off the metal panel of the instrument by 1½" 6-32 screws, and an insulated shaft coupling provided to insulate C_2 from the metal panel. Capacitor C_1 is mounted on the same subpanel. The leads of Coil L_3 are connected directly to the lugs of Tuning Capacitor C_7 and this serves to support the coil. This tuning capacitor has a ceramic panel with mounting holes which insulates it from the metal panel of the instrument. The builder must thread a bakelite shaft to the capacitor shaft to complete the insulation.

The transistor has four pigtails (one is a shield connection which must be grounded). The leads are soldered directly into the circuit, taking care to hold them with pliers to prevent heat damage to the transistor.

Binding posts X_1 and X_2 are insulated from the case; X_3, being the ground terminal, is not. Jack J_1 also is uninsulated.

The completed instrument weighs approximately 5 pounds. It is easily carried or stored and its controls are in good functional positions.

Use of Instrument

The flexibility and versatility of the checker will suggest a number of applications to the technician. However, the following paragraphs describe procedures for the principal application of the instrument in checking Class-D Citizen's-Band transmitters. To provide signal pickup from the transmitter under test, a small vertical rod or whip antenna (or even a short, vertical length of stiff wire) may be connected to the antenna terminal, X_1. This ordinarily will provide sufficient coupling when the transmitter has a similar antenna. When the transmitter output is low, however, tighter coupling may be obtained by connecting a 15-$\mu\mu$fd mica capacitor between X_1 and the antenna terminal of the transmitter, and connecting the ground terminal of the checker (Terminal X_3) to the ground terminal of the transmitter.

1. **Transmitter Operation.** To determine if transmitter is delivering r-f output: (1) couple checker to transmitter. (2) Set Switch S_1-S_2 to its RF position. (3) Switch-on transmitter and tune C_2 for maximum deflection of Meter M. (4) Set Rheostat R_1 for highest deflection. (5) If higher sensitivity is required, set S_1-S_2 to its μA position, connect a phone plug to Terminals X_2 and X_3, and insert this plug into Jack J_1.

2. **Field Strength.** Follow the same procedure given in Application 1. When the instrument is separated from the transmitter by an appreciable distance, the sensitive connection described in Step 5 in Application 1 should be used. For quantitative measurements, the checker may be precalibrated in r-f microvolts with the aid of a microvolt-calibrated r-f signal generator connected to Terminals X_1 and X_3. This will permit microvolt calibration of the scale of Meter M for a selected reference setting of Rheostat R_1.

3. **Carrier Shift.** The average amplitude of the carrier should not change during modulation. If the r-f output of the transmitter is monitored according to the procedure given in Application 1, the deflection of Meter M should remain steady when the transmitter is modulated. If there is any fluctuation of the meter reading, carrier shift is present.

4. **Modulation Percentage.** To check modulation percentage: (1) couple checker to transmitter. (2) Set switch S_1-S_2 to its RF position. (3) Switch-on transmitter and tune C_2 for maximum deflection of Meter M. (4) Adjust R_1 for full-scale deflection. (5) Set S_1-S_2 to its MOD position. (6) Whistle a clear, sustained note into the microphone, noting that the meter deflects. (7) At 100% modulation, the meter will read full scale.

Meter M may be precalibrated for direct readings of modulation percentage by varying the modulation of the transmitter or of a suitable test oscillator, and noting the modulation percentage corresponding to various deflections of the meter. The modulation percentages may be determined either from the test oscillator (if it is equipped with variable modulation and a meter for indicating the percentage) or by direct measurement, using an oscilloscope and Lissajou's figures.

When making any check of modulation percentage, R_1 always must be set for full-scale deflection of Meter

M when S_1-S_2 is set initially to its RF position.

5. **Voice Quality.** In this test, the actual voice is listened to, using the checker as a nonoscillating detector. (1) Couple checker to transmitter. (2) Set Switch S_1-S_2 to its RF position. (3) Switch-on transmitter and tune C_2 for maximum deflection of Meter M. (4) Adjust R_1 for full-scale deflection of the meter. (5) Plug high-resistance magnetic headphones (at least 2000 ohms d-c resistance) into Jack J_1. (6) Have assistant modulate transmitter by speaking into microphone. (7) Observe voice quality by means of headphone signal. (8) If necessary, reduce the resistance setting of R_4 to increase the headphone volume. (9) If the signal is too weak for a reliable test, a low-distortion audio amplifier may be inserted between J_1 and the headphones to boost the signal.

For quantitative tests, modulate the transmitter with a low-distortion audio oscillator and connect a distortion meter to J_1 for actual indications of harmonic distortion percentage.

6. **Crystal Checking.** To check the crystal for operation: (1) plug crystal into crystal socket J_2 of checker. (2) Set Rheostat R_4 to its highest resistance. (3) Set Switch S_1-S_2 to its XTAL position. (4) Tune C_7 over its range. (5) At resonance, if the crystal is operating, Meter M will be deflected upward. (6) Adjust R_4 for highest deflection at resonance. (7) When a crystal test is completed, move S_1-S_2 from its XTAL position. This automatically switches-off the battery and prevents unnecessary drain.

7. **Use of Microammeter Externally.** When the function switch, S_1-S_2, is set to its μA position, the microammeter is connected directly to Terminals X_2 and X_3. This makes the sensitive d-c instrument available for use in external circuits.

Parts List for Figure 2.

B—Miniature 9-volt transistor battery —(Burgess 2N6)

C_1—20 $\mu\mu$fd miniature silvered mica —(C-D 22R5Q2)

C_2—5 $\mu\mu$fd midget butterfly variable—(Cardwell PL-6076)

C_3, C_5, C_9—0.001 μfd mica — (C-D 1W5D1)

C_4—0.1 μfd 200 v tubular — (C-D PM2P1)

C_6—50 $\mu\mu$fd miniature silvered mica — (C-D 22R5Q5)

C_7—50 $\mu\mu$fd midget variable — (National UM-50)

C_8—15 $\mu\mu$fd miniature silvered mica —(C-D 22R5Q15)

D_1, D_2, D_3—General-purpose germanium diodes — (Sylvania 1N34A)

J_1—Midget, closed-circuit phone jack — (Mallory A-2)

J_2—Crystal socket — (Millen 33302)

L_1—3 turns No. 20 enamelled wire closewound on same tubing as L_2. Space 1/16 inch from ground end of L_2.

L_2—13-1/2 turns No. 20 enamelled wire on 1/2"-diameter polystyrene tubing. Space to winding length of 1/2 inch. Tap 5th turn from ground end.

L_3—7 turns No. 20 enamelled wire on 1/2"-diameter polystyrene tubing. Space to winding length of 1/2 inch.

M—0-50 d-c microammeter

Q—High-frequency transistor—(RCA 2N247)

R_1—1000-ohm midget wirewound potentiometer

R_2—100 ohms 1/2 watt resistor

R_3—100 ohms 1/2 watt resistor

R_4—1/4 megohm midget potentiometer

R_5—240K 1 watt resistor

R_6—36K 1 watt resistor

R_7—1000 ohms 1 watt resistor

S_1-S_2—Miniature 2-pole, 4-position, non-shorting, rotary selector switch — (Centralab 1003)

T—Miniature transistor transformer: 500 ohms c.t. to 500 ohms c.t. (1:1 turns ratio)—(Thordarson TR-37)

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SELL OR TRADE — Precision E-200-C sig. gen., $65; GE Mascot light meter, $10; Johnson low-pass filter, $10. Want ham receiver or tape recorder. Sumner Weisman, 1238 Dickinson Dr., Coral Gables 46, Fla.

FOR SALE — Hardly used NRI test instruments, models 33 signal tracer, 68 tube tester, 112 R-C tester, 88 signal gen.; Rider-NRI service manual Vol. 1 thru 1946. No swaps, best offer, COD. E. A. Bernstein, Box 11, New Gretna, N. J.

FOR SALE — Surplus Airway Beacon transmitter, 200 w., AM-CW, power supply, modulator and RF sections, in steel cabinet, fully metered, $90 or best offer. Local only. Flanagan, 314 South Road, Bedford, Mass.

FOR SALE — Rek-O-Kut professional disc recorder, like new. Have 120 line (78) and 240 (33 and 45) leadscrews, sapphire cutters, etc. Real buy — $275. Bob Hartung, 3522 Avenue M, Fort Worth, Tex.

WANTED — CRT 7JP4, 7JP1, or 7VP1 7" tube in good cond. C. M. Franke, 15 Cherry Lane, West Haven, Conn.

WANTED — Hi-Fi Stereo AM-FM tuner; Jensen RP-302 ultra high freq. tweeter. Cash or swap. L. Buddine, 1700 West High St., Haddon Heights, N. J.

SWAP — 813's, 836's, 866's, 2AP1, 7BP4, 10BP4 and a 1 ton air conditioner, 220 volt, for ham gear. Joseph Nohe, Jr., 4026 Lyndale Ave., Baltimore 13, Md.

FOR SALE — Philco G8002 UHF auto-level sweep gen., in A-1 cond., at less than half price, $100. Robert Miller, 810 So. Hennepin, Dixon, Ill.

FOR SALE — Norelco PT200 TV console receiver, $40, and new Norelco picture tube 3NP4, $10 FOB. G. R. Campbell, 2781 Packard Rd., Ann Arbor, Mich.

BOOKS — CREI math $15, Sec. I $5, Sec. II $12.50; Schuam's Col. Algebra 75c, Calculus 75c; Cook's math $1.50; Rider FM trans. and rec. $1; Helt Prac. TV Engr. $2.50, and others. Molyneux, 4551 Shadesview Dr., Mobile, Ala.

WANTED — Mod. 1075 B&K analyst. State price and condition. Minewiser's TV, 6801 - 4th St. N., St. Petersburg, Fla.

TRADE — Abbot TR-4 transcever on two meters without power supply, for VHF 152, 35mm camera, or VTVM. Harold Showman, 354 W. Garrett St., Somerset, Pa.

FOR SALE — Sonar MR 3 receiver, used very little; Superior Instrument CA-12 signal tracer in very good condition. Make offer. G. R. Campbell, R. 1, Sunnyside Ave., Clarks Summit, Pa.

FOR SALE — Heathkit T-3 visual-aural signal tracer, $14, and Q-F1 multiplier, $6; Johnson 250-24 SWR bridge, $5. All like new and with instructions. 78 rpm record changer and turntable for the postage. W. C. Knepper, Route 5, Box 216, Cumberland, Md.

WANTED — Two-way radio (police type), 6-volt, in good cond. Will trade in binders complete set of National Radio Inst. Radio-TV service course or cash. Have few very old radios. James Eberhart, Chief of Police, Parrott, Ga.

FOR SALE — Heathkit 010 scope with probes and VC-3 voltage calibrator, $50; Precision E-400 sweep generator complete with crystals, $75; Blonder-Tongue mixer amplifier MA4-1-M, channel strips for Channels 3 and 10, $25. Ernie's Radio TV Service, 2809 Clovis St., Bluefield, W. Va.

SELL OR TRADE — Good 16 mm sound projector, film, for cash or new radio-TV tubes, recorder, SW, or standard radios, TV set, 3-speed record player, or what have you? E. G. Bartlett, Box 134, Atlanta, Mo.

FOR SALE — Two Bogen B-50 series transcription turntables — 3-speed and 4-speed — play 16" transcriptions, have GE RPX-050 cartridges, good condition, $50 for both FOB. Paul Smith, Box 632, Danville, Ky.

FOR SALE — Precision E-400 sweep gen. with xtals $40; Superior cross-bar gen., $17; Sprague KT-1 capacitor checker, $18; Oak Ridge CRT and hi voltage checker, $15. Rambo's TV Service, 117 No. Main St., Spring City, Pa.

FOR SALE — 20A with 10 to 80 VFO, l. n., $200; G4ZU beam, $25; 300w multimatch mod. xfmr., $15; 10M whip, $5; Webcor 107 3-speed changer, $15; Weller sander, $9. L. Wright, Eagle Grove, Iowa.

FOR SALE OR TRADE — Pair V70D and one 832 tubes; Ampcoa briefcase secret recorder; 1947 to 1955 QST-CQ and Radio TV News. Frank Guetter, Orland Park, Ill.

FOR SALE — Super Constellation SC500S, hi gain fringe-area TV antenna, double stack, with mast, $35; Zenith FM-AM clock radio (modern gray color), $50. Write for free list of electronic equip. Stanley Bombka, R. 3, Eagle River, Wis.

FOR SALE — QST 47-57, CQ 47-54, Radio & TV News 54-57. Best offer whole or part. Stanley Smalec, 164 Walnut St., Seymour, Conn.

FOR SALE — Gonset 2 meter converter, $20; Central Electronice model A side band slicer, $35; Knight 50 watter, $40; Knight VFO, $30; National NC-125 and speaker, $140; and DX-100 transmitter, $200. C. Vinson, Jr., 2796 Larkspur St., New Mohansic Estates, Peekskill, N. Y.

WANT TO BUY — Hallicrafter SX-42, SX-43, or SX-71 comm. receivers in good condition. State cond. and price. Bob Caylor, 417 Brown St., Logansport, Ind.

FOR SALE — Globe Chief 90 w. transmitter, guaranteed never used, didn't get my ham ticket. Best offer or first $40. Ken Johnston, Room 923, 30 Bay State Rd., Boston 15, Mass.

SELL OR TRADE — LSG-10 sig. gen. in excellent cond.; Eico: resistance box, capacitance subst. box, and tube tester adapter. Need FM tuner in good cond. Jack Himelfarb, 6402 24th Ave., Brooklyn 4, N. Y.

FOR SALE — Weston 769, all probes, complete, never used for commercial, $75; Sylvania 220 tube checker, $75; B & D 9¼ P.P. saw, $70; "Tel. for Radiomen," $4. Express collect. Peter Loden, 8904 Fairfield St., Philadelphia 15, Pa.

CASH — For low-priced test equipment and TV books, or trade Precision 920 electronamic tube and set tester. R. B. Johnson, 3922 W. 108th St., Inglewood, Calif.

WANTED — DR200 Monitoradio 30-50 and 152-174 Mc band, PR 931 30-50 Mc and PR 9 152-174 Mc band, or others same coverage. Earl T. Meldrim, 1661 Butte St., Richmond, Calif.

FOR SALE — Adventurer, $32; grid modulator, $8; Heath VFO, $14; Electro-Voice 915 mike, $4. All for $54 FOB. G. S. Garrigan, Plymouth Rd., Union, N. J.

FOR SALE — Rider manuals 1 thru 16, TV-1, TV-2 and PA manual No. 1; G.E. 250 portable radio; Hickok 610 sweep gen. Gordon E. Hopper, 75 Kendall Ave., Framingham, Mass.

FOR SALE — Potter & Brumfield LM5 SPDT plate relays, 2500 ohm coil, $1 each, plus postage. Ted Davidson, 5520 Cornell Ave., Chicago 37, Ill.

FOR SALE — Heath OM3 scope with two probes and manual, A-1 condition, $50; Shield sig. gen., $19; Riders Vol. 18, $6; Radio City TV generator, $21; Knight in-circuit condenser checker, $10. Daniel Seidler, 2644 W. 23rd St., Chicago 8, Ill.

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TRADE — Dow-Key coax. relay type DKC GE 115 v. AC; Ameco LN-2 low pass filter; Millen 90901 scope with power supply; practice tape 13 and 15 WPM. Trade for good test equip. J. Calder, 6351 Oakland St., Philadelphia 49, Pa.

SELL OR TRADE — For SSB ham receiver: Edison, William & Mary console phonograph SM-7967, two playback heads and 20 Edison recordings. Mechanically good. Prefer local deal. W. B. Louis, 7015 Ridgewood Ave., Parma 29, Ohio.

FOR SALE — Heath 0-10 scope, little used, less probes, $40; Mallory vibrator tester, factory wired, l. n., $20; Century FC-2 tube tester, like new, $45. All plus shipping. Want escutcheon mask for 27MP4 CRT. F. Berry, 4623 Eventide, Kalamazoo, Mich.

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SALE — Heath OM scope, DX-40 transmitter, VFO, FM-3A tuner; Morrow 10-20-75 mobile 6-12 v. converter; Viking Matchbox antenna coupler; PE-101 dynamotor. C. H. Falls, Box 113, Bay Village, Ohio.

FOR SALE — Sams Photofacts 1-255, $100; Eico 425 push-pull scope with hi freq. probe, $50; Heathkits: VTVM, sig. gen., and sig. tracer, $15 each. Herman's Radio Service, 803 West Locust St., Bloomington, Ill.

WANTED FOR CASH — Amateur receiver, transmitter or other commercial gear. Also need many types unused transmitting and special purpose tubes. K. Gensler, 512 Broadway, New York 12, N. Y.

FOR SALE — 6 meter converter 7-11 mc. IF, xtal controlled and uses three tubes, $13, less xtal. E. J. Wolitzer, 2143-82 St., Brooklyn 14, N. Y.

FOR SALE — NC-183D communications Rcvr, like new Cond., complete with matching spkr. and instruction manual $235. G. L. Campbell, 209 So. 70th St., Birmingham, Ala.

SELL OR TRADE — IRE Proceedings 47 to 54 $7.50 per year exchange for early Wireless equipment manufactured prior 1922 including Grebe Kennedy, Atwater Kent, bread board or magazines same dates. Inquiries answered, Luther E. Harrison, 2410 Salerno Dr., Dallas 24, Texas.

WANTED — Speaker enclosures, Globe Champion 350, Electronic Organ in whole or part. Harold F. Cushing, 16 Preston Dr., Manchester, Conn.

FOR SALE — Simpson 488 Field Strength Meter $75; Altec 704B HiFi Spkr & Enclosure $95; RCA ATJ TV Camera and Companion Xmtr, $100; Heath W-5M & WA-P2 $72; Heath CE2B Enclosure $40; all in new cond. Bob Schill, Box 412, Hinsdale, N. H.

WANTED — Bell 2520 FM-AM tuner, Hallicrafters SX-62, Heath capacitor tester, transistor radios. Sell: Webcor 1127 3 speed changer with GE cartridge and extra new diamond needle. Oliver A. Zucco, Box 718, Canaan, Conn.

FOR SALE — Heath AR-3 Communications Receiver in cabinet and Q Multiplier, $35 postpaid. Edward G. Videika, 33-40 89th St., Jackson Heights 72, N. Y.

SELL OR SWAP — 813 all band Switching Rig from Handbook with all brand new parts. 250 to 300 watts input in Bud rack with casters. All stages metered. Complete with speech amp. & modulator. Cinci, 204 Charter St., Clarksburg, West Virginia.

FOR SALE — Riders Manuals 3 thru 21. best offer. E. S. Priem, 4289 NW 16 St., Gainesville, Fla.

SELL OR TRADE — TV camera chain, Doge-Vidicon, complete except for sync. generator. Will trade for commercial ham receiver and transmitter. H. E. Savacool, 302 Marian St., Toms River, New Jersey.

SALE — Rek-O-Kut professional cutting turntable and overhead lathe, including microgroove leadscrew, etc. Highest bid providing it's right. Yale Hi-Fi & Service, 2732 Florida Ave., Tampa 2, Florida.

WANTED — Issues of Popular Electronics: Vol. 1 No's. 1 thru 6; Vol.2 No's. 1 thru 6; Vol. 3 No's. 1, 2, 3, 5, 6; Vol. 4 No's. 1, 2, 3; Vol. 7 No's. 4. 5. 6. If you have any or all contact Don Wasserman, 102-H-Brookside Are., New Haven, Conn.

TRADE — Good Electro-Voice 205-S Carbon mic with push-to-talk for crystal mic of equal value. Also have 41S1 Dynamotor. J. Bruce Parker, 2330 S. Main, Wichita, Kan.

FOR SALE OR TRADE — Wilcox-F3-Fixed Freq. Crystal Controlled Receiver 3-6 megacycles. W. Garbutt, 1524 Sycamore, Casper, Wyo.

WANTED — Riders Radio and TV Manuals or Sams Photofacts. Must be bargain. W. B. Jones, TV Service, Carnesville, Georgia.

FOR SALE — Sams Photofacts 1 through 200 in 20 binders, like new, $200. Thomas J. Lotito, 30 Cisney Ave., Floral Park, L. I., N. Y.

WANTED — Recorders, both tape & disc. State age, condition, price. John C. Orlow, 1049 N. 70 St., Milwaukee 13, Wisconsin.

WANTED — Instruction manual & schematic for surplus signal tracer TS-673/U, Stancor PC 8410 & A 8056, & Triad C13X choke. Bob Tanzer, 216 Vine St., Everett, Mass.

TRADE — Radio parts, tubes, tube checker, etc., for Lionel or American Flyer miniature electric train locomotives, standard (wide) gauge only, any cond. if motor & wheels are good. C. W. Davis, 713 Piedmont St. Reidsville, N. C.

SELL OR TRADE — 5820 camera tube, $40, Guaranteed—cost over $1050 new. Will ship in factory carton. Philip L. Koch, 3534 Connecticut St., St. Louis, Mo.

FOR SALE — Books: Albert's—Electrical Fundamentals of Communication; Eastman's—Fundamentals of Vacuum Tubes; Cooke's—Mathematics for Electricians & Radiomen — $3 each; Chinn's—TV Broadcasting, $4. N. Y. area only. N. Verna, 21 Newberry Pl., Rye, N. Y.

FOR SALE — 160 copies of McGraw Hill Electronics magazine from 1944 to 1959. Make offer or send for complete list. George Hoffmann, 337 Whitefish Rd., Port Washington, Wis.

SELL OR SWAP — Hallicrafter ham receiver S-39; Bogen intercom; Kodak twin lens reflex camera f3.5, Dynamic arc welder; 5TP4 CRT, 17 BP4A CRT, RCA AM & FM tuner; amp. spkr. Dave Siegel, 130-18 223 St., Laurelton 13, N. Y.

WANT — Used in good condition 115-230V 60 cycle AC power plant 10 KW air cooled motor. State lowest price. Frank O'Nell, Taconic, Conn.

WANTED — Instruction & service manual for Dumont 208-B scope. H. C. Fields, 4116 Morgan Circle, Ft. Worth 18, Texas.

FOR SALE — De Forest Radio-TV course, $25; RTTA Radio-TV course, $20. No kits. Prefer local. Daniel A. Ciarlo, 25 Byrneside Ave., Waterbury 4, Conn.

FOR SALE — Hickok 125 VTVM, $30; selenium rectifier checker $11; tube caddy & tubes, $50; Heath-kit C3 capacitor checker, $15; Supreme 567 VOM, $30, FOB Roka, 5341 Cordelia Ave., Baltimore 15, Md.

FOR SALE — Jackson 49 tube checker, $15; 10m beam, Balun, rotor, $30; Hq 100, $150; NRI Radio-TV course, $20; Heath-Kit Q-multi, $8; mobile ant. spring mount, $5; Simpson tube & multichecker, $5. Al Potter, 2 Buttonwood Dr., Sayreville, N. J.

FOR SALE — Simpson 383A condenser checker, mint cond., $50; Weston 777 tube checker, modified for 9 pins good cond., $10. Have old magazines, books, manuals. Frank Denning, 86-75 Midland Pky., Jamaica 32, N. Y.

FOR SALE — Riders 1-20 plus TV 1-5 in fine condition with indexes plus misc. Philco, Zenith & RCA factory manuals, $75. Stuart Meyer, 1103 Kent Pl., Linden, New Jersey.

WANTED — Used 5" or larger scope. need not be in working order but have all parts intact. Algy Bohlman, Spencer, South Dakota.

SELL OR TRADE — Webster Electric tape recorder; battery charger; South Bend Lathe & Shaper; VTVM; speakers, amplifiers,2 drill presses; electronic parts; Neon clock. William J. McNeil, 77 East First St., Oswego, N. Y.

FOR SALE — 12 radio text books, over 100 radio tubes, 8 speakers, large amount of parts, all for $25. Will send anywhere. M. Berlot, 853 Riverside Dr. N.Y. 32, N.Y.

SELL OR TRADE — Heathkit SG8 sig. gen., and LP-2 linearity pattern gen. (mod. to improve stability), Knight capacitor checker, Radio City 750 UHF-VHF Do-All sig. gen. All like new. Al Theodore, Box 95, Dalzell, Ill.

FOR SALE — Precision 612 tube tester complete with instructions. Make offer or will trade signal gen. Albert Beilfuss, 8532 School St., Morton Grove, Ill.

FOR SALE — DX100 in excellent condition, $125, pickup only; also other gear for sale. John G. Morrice, 57 Rockaway Ave., Rockaway, N. J.

FOR SALE — Precision VTVM like new with test leads & instruction manual; Sprague Kwik-Test KT-1. Harry Noblitt, Noblitt's Radio & Elec., Edina, Mo.

WANTED — Schematics for 16mm motion picture sound amplifiers: Bell & Howell, RCA, Kolograph—Holmes, DeVry, etc., 1935 to 1945 models. Charles S. Bruscato, 24 Arlee St., Shawomet, R. I.

TRADE — Webcor T2020 port. tape recorder, 2-speed, dual track, like new cond. Want Sam's Photofacts or Riders TV manuals. Mike Cory, 4164 Harrison St., Bellaire, Ohio.

SELL OR SWAP — Stromberg-Carlson International port. radio, 8 band, AWP-8 AC-DC & battery, fine cond. Best offer over $75 or swap for amateur transmitter. R. Quelch, Box 162, Stony Point, N. Y.

SWAP — Large Gilbert electric drill, set of drills MF bench vice, Eifel & Snap lock wrenches, set of taps & dies, for Eico sig. tracer or Heath. Local trade only. Irwin Kamner, 1951 Elston St., Phila. 38, Penna.

FOR SALE — RCA type WR 59C like new, TV sweep gen., includes leads & instruction manual, $75. David Pollock, 178 Pinckney, Little Silver, N. J.

FOR SALE — Deluxe Citizens Band converter built from plans in Oct. '59 Sylvania News complete with tubes, crystal, & cables, $22; Meissner 4E AM-tuner coils & tuning cond. kit, $6.75. Prices prepaid. The Toll House, West Cornwall, Conn.

WANT — Lampkin sig. gen. Sell AM-FM sig. gen., Triplett 3433, $35; Precision E200, $15; two BC348 $55; sig. gen. Measurements 78B, $20. All in good shape, FOB. Geo. H. Laudet, Box 5862, Washington 14, D. C.

WANTED — Hallicrafters S-38 or National NC-60 receiver, need not be in operating cond. but requiring only minor repair, for cash or trade Heath TS-3 sweep gen. Elmer H. Melvin, Rt. 2, Jamestown, Ohio.

WANTED — Triplett 2470 Wattmeter, Weston 982 VTVM, Solar CF cond. tester. Bert C. Emery, 5729 — 23 Ave. So., Minneapolis, Minn.

FOR SALE — Standard Instructograph code machine with spring motor, like new cond, complete with ten code tapes, transistor oscillator, J38 Key, Brandes headphones. $22.50 complete, postpaid. Herman Senn, Jr., Rt. 4, Box 194-C, Bastrop Dr., Monroe, La.

WANT TO BUY — Any condition Meissner analysts, must be bargains. Have superior gen. for color, many UHF converters for sale or trade. Wm. J. Phillips, 2441 NE 9th Ave., Pompano Beach, Fla.

FOR SALE — Unused NRI 56 scope, wide band, all probes included, perfect oper. condition, 1 yr. old, $100. L. E. Texter, Box 179, Pavilion, N. Y.

WANTED — 6 type X-99 receiving tubes. Send price & number of tubes available. John A. Striepling, 2933 Atlantic St., Franklin Park, Illinois.

SELL OR TRADE — 6v, 10m, 40w mobile transmitter, completely self contained with dynamotor. Crystal controlled. Built by West. Elec., $25, or trade for BC-659 with PE-120. Paul Sturpe, 228 E. Church St., Orrville, Ohio.

SELL OR TRADE — 6L6 PP juke box amplifier with good tubes and heavy 15" speaker. Plenty of room on chassis to add mike stage. Charles Pilgrim, 308 First Ave., Aitkin, Minn.

FOR SALE — Seco FB-4 flyback & yoke checker, $25; Century in-circuit condenser checker, $20; Simpson 1000 tube checker, $40. H. Kroll, Box 115, Seymour, Wisconsin.

FOR SALE — Collins TCS transmitter & receiver, 12v power supply, all cables, remote control & speaker, mike in mint condition $125; ABT converter 110v DC—110v AC, 185w, $20. Harry Randeau, 2436 Carney Ave., Maunette, Wisc.

WANTED — QST issue of April 1955. State price & cond. Benny Soukup, 3500 Colcord Ave., Waco, Texas.

SELL OR TRADE — Eico 368 sweep & marker gen., tested by Eico Co., very gd. cond., $50. 5 mos. old. Will trade for good VTVM, prefer Simpson. Andrew Verschure, 202 E. 7th St., Holland, Mich.

FOR SALE — 19" Motorola color TV (needs work) $75; Webster Elec. Tape Recorder, $75; Precision E-200 Signal Generator, $30; 40w PA system with 2-12" speakers in portable cases, $65; color bar gen, Precision E-440, $150. Murray Barlowe, 55 Wilson Lane, Bethpage, New York.

FOR SALE — Hundreds of good but hard to get, older type radio tubes, rectifiers, VT & Eye tubes, very reasonable. A. Fiess, 3224 Midland Ave., Syracuse 7, New York.

WANTED — GE port. radios (Batt. AC-DC) models 250 & 260, working order or not, Cash or trade electronic & industrial parts & equipment. G. Kusse 11630 S. W. Lacey Ct., Portland 23, Oregon.

FOR SALE — Complete contents of Radio & TV repair shop: Sams Photofacts, Hickok, Jackson, Triplett, Simpson, & Pyramid equip., tubes, speakers, capacitors, resistors, small tools, etc. Send for list. Howard Miller, Box 141, Forest, Ohio.

BUSINESS FOR SALE — TV, Appliance & Record Store: over $100,000 per yr. gross sales, 21 yrs. in same loc., active neighborhood, modern store front. Valuable franchises & many school accounts. Owner retires. Radio Margo, 7415 MacArthur Blvd., Oakland 5, Calif.

WANTED — Video If strip for Stromberg-Carlson 621A TV. State price & cond. Nowak TV & Appliance Service, RD-1, Medina, New York.

FOR SALE — Hi-Fi Y754 Monaural Preamp Allied kit, wired by skilled tech, first class cond. State best price FOB. Jas W. Bernthal, 9321 Forman Rd., Affton 23, Mo.

FOR SALE — Heathkit O-8 scope, 5" extended range, push-pull, good cond., complete wiring, instruction manual incl. Needs transformer. Best offer over $18. H. L. King, Box 625, Mt. Vernon, N. Y.

SELL or TRADE for good sweep gen. — TV field strength meter VHF, made by Approved Electronics Instrument Co., reads directly in Microvolts. Buddy's Radio—TV, Smith's Ferry, Pa.

FOR SALE — Collins FM-AM tuner, RCA 3" scope, Jr. Voltohmist, complete watchmaking tools. Need bulk tape demagnitizer, Ferrograph 8¼ reels, mikes, concondenser tester. M. Kennedy, 315 W. 4 St., New York, 14, N. Y.

WANTED TO BUY — Electro-Voice Patrician speaker assembly, complete unit: speakers, controls, cabinet. James H. Littig, Box 187, Kasota, Minnesota.

WANTED — New or used 15GP22 color picture tube in good cond. T. A. Egan, 9138 W. Olympic Blvd., Beverly Hills, California.

WANTED — 19VP22 color pic. tube in good cond., or info. on CRT rebuilding shop equipped to handle. T. A. Gardner, 4424 Mathew St., Northwoods 20, Mo.

FOR SALE — Citizens Band users: add 5 channels to present unit, except those using separate xmit & rcv crystals, $10.95 postpaid. Crystals extra at $2.95 ea. W.A. Suter, 812 N. Lee, Bloomington, Illinois.

SELL OR SWAP — Organ pipes, authentic wooden or metal, 6" to 6', $2.50 up to 1' long, $1 per addit'l ft., or swap for electronic or camera equip. J.L. Sommerville, Box 19086, Indianapolis 19, Ind.

FOR SALE — Large modern house with separate Radio & TV Shop. Oldest in the country, priced to sell. B. M. Rice, 817 7th St., Three Rivers, Michigan.

FOR SALE Complete 12v mobile station: Elmac PMR6A with matching pwr supply & AF67-PE103, Shure mobile microphone, Shakespear fiberglass antenna with Bassett coils for 15-40-75, Advance coax relay, all connecting plugs, cable, hdwr. & manuals, $200. Horace A. Snow, 15 MacArthur Blvd., Danvers, Mass.

FOR SALE — NRI 34 sig. tracer, very good condition, complete with instruction manual, $20 plus ship. Ferdinand Wood, Box 75, Jeffersonville, New York.

WANTED — Old radio, equip. parts, tubes & books or magazines in good cond. & prior to 1925. Cash or swap. Ralph Ernstein, 6124 Teesdale, N. Hollywood, California.

FOR SALE — Tecraft 6 meter converter, good cond., $25; home brew 6 meter converter with 6BA6, 6U8, & 6C4, best offer over $10. Jack Haken, 124 Audley St., Kew Gardens, N. Y.

WANTED — Radiola I Antique Radio & others, such as Grebe CR-1, etc., Kennedy, Atwater-Kent Breadboard, West. Elec. 387W studio mike & housing. Have like new Leica 3C to trade. Paul Giganti, 2429 San Carlos Ave., San Carlos, Calif.

WANTED — Paco test instrument & clean 6 & 12v auto radios oper. or not. O. John Zetlmeier, 1123 Woodycrest Ave., New York 52, New York.

SWAP — Jewelers lathe & staking tool set, nice cond. Trade for 5" scope — prefer Heath in good cond. R. DuFresne, 9543 E. Flaherty St., Temple City, Calif.

FOR SALE — Eico 666 tube & transistor tester $60; Precision 5" scope ES550 with probes, $150, Radio-TV books, tubes, parts, etc. Bob Duraski, 270 Crown St., Brooklyn 25, N. Y.

FOR SALE — General Radio, 636-A wave analyzer $300; 222S Precision variable cap. 100-3000 mmf $100; 434 B freq meter 16-20,000 cps $50; 107 variable inductor 1.5-6.5 mh $25; Ballantine 300, $100; 700, $200. Emil Backstrom, Jr., 303 Hornidge Rr., Mamaroneck, New York.

FOR SALE — 2 EV 848 speakers with 2 EV 877 xfrmrs, gd. cond., $80; Pentron tape deck 9T-3M & HFP-1 preamp., $25. J & R Sound Service, 28 Smyrna St., West Springfield, Mass.

WANTED — Quality microscope with oil immersion lens for cash or trade elec. &/or electronic instruments. D. Kurs, 775 Plympton St., New Milford, N. J.

FOR SALE — Mobile 120v 10m sta.: Stancor xmtr, Gonset triband, dyn, $50; Allied deluxe all-brand rcvr with S meter & xtal calibrator $95; midget batt. tape recorder $60, FOB. Bill Kraemer, 14285 San Feliciano, La Mirada, Calif.

FOR SALE — Philco 7008 Align. gen. practically new, $135 plus express charges. Thomas J. Tucci Co., Adams Ave., & Tabor Rd., Phila. 20, Pa.

FOR SALE — Upright neon sign, radio across top, TV down the side. Original cost with timer $400, price $150 fob. J. J. Sanderson, Box 545, Jacksonville, N. C.

FOR SALE — Powercon 6SH15 CD inverter 6V DC, 110v AC, 150 VA-cont. 175 int. like new, $30 or what have you? Charles McDonald, 4492 Gratiot Ave., Port Huron, Michigan.

SELL or SWAP — DX-40, $55; HRO-5M power supply, 180kc-30mc speaker, $65; AR-22 Rotator & indicator, $23. Interested in any mobile equip. Crowley, Rutgers Univ., Box 1073, New Brunswick, N. J.

NEED — Schematic & data on Radio Design Co. 750 VOM. Arthur Ideker, c/o Ark. Power & Light Co., Pine Bluff, Ark.

FOR SALE — AM & FM rcvr schematics prior to 1950 $1 ea. pp.; Coyne 1-5 $12; Gonset 3-30mc conv. $23; Antigue radios; 1/4HP mtr. $4. C. G. Deuble, 3246 Baseline Rd., Grand Island, N. Y.

SELL OR TRADE — 600-0-600v power xfrmr 250 MA in fine cond., $11, or trade for? Eugene M. Manning, Rt. 2, Box 154, Lafayette, La.

WANTED — Cabinet & knobs for Zenith table mod. 5-tube radio, Chassis 5C01, in any color. J. A. DeFonso, 624 Reynolds St., New Castle, Pa.

FOR SALE — Heath: TC-2 tube checker & CT-1 Capaci-tester; Eico: 221 VTVM & 320 sig. gen., $60 for all. Local desired. L. Andrews, 2 Doyle St., Lawrence, Mass.

FOR SALE: Oak Ridge 104 gen. $15; Master mobile ant. mt. 232XSSC, $7; Bud 1551 p-p plate var. cond. 110mmfd 250w, $5; 8mfd at 2kv, $4; VC 50-32, $5; VC-12, $4. All fob. S. Egelberg, 3029 Matthews Ave., Bronx 67, New York.

FOR SALE — Bell T-213 stereo tape recording deck with 2-RP 120 Preamps, like new, $220; Eico HF-61K Hi-Fi preamp. (own pwr sup.), $28; Garrard RC-88 stereo auto-manual rec. changer with stereo cart., $50. Local only. G. Dalamango, 160-26 26 Ave., Flushing, N. Y.

FOR SALE — GE 90 UHF tuner $16 in original carton. Dupont Television, Rt. 1, Fort Wayne, Indiana.

FOR SALE — Mobile 80m, 17w xmitter & rcvr, BC-654A, comp. with cables, both pwr sup., mike-phone set, antenna, all spares, diagrams, $65. T. Stansbury, 4871 Battery Lane, Bethesda, Md.

SWAP — Complete Elec. Eng. Course, Polytechnic Inst. of Brooklyn — fifty textbooks & lab courses. Need all types Public Address equip. Herbert Piller, 242-12 Horace Harding Blvd., Douglaston 62, New York.

FOR SALE — Converted BC454 $5 & BC696 $8; 5 band mounted coil kit with matching cond. & dial, tunes 550kcs-30mcs, $18; HV/LV reg. pwr. sup. $35; RTTY filters & relays, $9. H. T. Brown, 3301 156 St., SW, Alderwood Manor, Washington.

FOR SALE — Minifon pocket wire recorder with lapel mike, wrist watch mike, tele. recording attach., AC pwr. rect., pwr. cord for auto use, amp. connector cord, nylon shoulder holster, 1 1/2 hrs of wire. Hardly used, 1/2 orig. cost. Roger Many, 40 Chamberlin Ct., Hamilton, Ohio.

FOR SALE — 15 diff. units of Eico testing equip. to high bidder, or trade on similar equip. by RCA, Hickok, etc. Write for comp. list and send yours if trading. Williams TV Service, Box 92, St. Clair, Michigan.

SWAP — GR VTVM 726A with probe; GR AC galvan. sq. law 488H; Weston 264-25ma meter, 45 std meter mirror back scale, large 271—1.5ma; GR486 output meter. L. Walter, 24 Carlton Terrace, Rutherford, N. J.

FOR SALE — Minifon P55 pocket wire recorder, case, microphone, tabletop amplifier, batt. eliminator, 160 min. rec. wire, stethophones. No reasonable cash offer refused. Charles Curran, Box 43, Wakefield Station, Bronx 66, N. Y.

WANTED — Old fashioned batt. type broadcast rcvr — Crosley 51 or 52, oper. cond. John Remeika, 124 Goodwin St., E. Hartford, Conn.

FOR SALE — 30 coin operated radios (Coradio) at half pr., gd. cond., $29.95 ea. Also have hables , electronics, QST 1932-34 & 1938-53, IRE Proceedings, 1945-56. Best offer. R. J. Evans, 525 Highland Ave., E. Lansing, Mich.

ELECTRONIC KITS. CONSTRUCTED. — Quick service. Send specifications for free estimate. William M. Cooper, 700 E. 2nd St., Siler City, N. C.

TRADE — Sams manuals 1-17 & other assorted circuits, late mod., for single lens reflex 35mm camera. L. M. Rice, 612 State St., Three Rivers, Mich.

FOR SALE — Commercial rcvr R-100, broadcast and long wave 1500kc-90kc, mahog. cabinet, gray panel, clean, gd. cond. $30, or with AC sup. $35. L. Grant, 15 Harold St., Chelmsford, Mass.

FOR SALE — Heathkit T2 tube checker w/ case $25 & T-4 sig. tracer $15; PACO condenser checker $15; Knightkit wireless broadcaster amp. with mike $10. All wired, vy. gd. cond. Pr. incl. inst. booklets, post. Smith, Box 189, Jamaica 31, New York.

WANTED — Riders TV manuals 13 & up, O-150v AC panel meter tubes. Dennis T. Willis, 1404 S. Jackson St., Tucumcari, New Mexico.

WANTED — Test equip., tape recorders, or TV tubes. Will trade accordions, cameras, kodaks & movie camera. All letters ans. Harold Wurm, 1015 W. Grant St., Appleton, Wis.

SELL OR SWAP — Jackson 648A tube checker & Howard 482 FM tuner, guaranteed A-1; Knight Hi-Fi tape rec. 2 speeds; Contex add. mach. mod. 1571115. Need radio model boat with equip.; gd. short wave rec. HQ or NC. Fred Welch, 845 Allingham St., Van Wert, Ohio.

FOR SALE — ITI136R field strength meter UHF-VHF $45; Stancor volt. adj. 55-135 in. 115 out. 300w, $10; Superior crossbar gen. $15; Eico grid cir. tube tester, $15; Doss 200 tuned RF Video Master, $10. Glenn B. Hunter, 18 N. Parker Drive, Janesville, Wis.

WANTED — comp. sets of Sam's photofacts, new or used. State pr. & folder nos. Will pay ship. Carl Koepke, 127 S. 6th Ave., West Bend, Wis.

WANTED — Used tape recorders — state make, model, serial nbr., cond. & best fob pr. Also want 8" RCA table mod. TV port. Tape Recorder Sales, 433 S. Wabash Ave., Chicago 5, Ill.

SWAP for cartridges — Sams Vol. 1 & 2 changer manuals & Red Book 2nd. ed., Mallory ency. 6th ed., Rider PA man. & radio manuals vol. 1 to 5 abrid. & 6-15 with index. electronic books. Paul Curtis, Enterprise, Oregon.

SELL OR TRADE — 2 Superior 15 amp. pwr stats; Variac 100Q, 18 amp. by Gen. Radio; freq. meter, BC-211-M, like new, orig. chart in vy. gd. cond. WANT several 4-400A; 304TL or TH; 5555; 4-125A; & 4-250A. R. V. Rosellini, 2619 S. Gaylord, Denver 10, Colo.

SALE — Masco mobile & Thordarson 25w sound sys.; NRI xmtr; Supreme VTVM; Eico scope; disk recorder; Voitlander & Minolta Autocord Cameras. Ed Graf, Box 3930, Cleveland 20, Ohio.

WANTED — Elec. mtr. repair & rewinding books or courses & tools; trade radio — TV electronics books or cash. F. Soliveres,, 114 E. 102 St., Apt. 1, New York 29, New York.

WANTED — Band select. switch pt. no. 85-302 for Zenith radio 12H670 — chassis 12B1. John Hrinda, 1379 Stewart St., Northampton, Pa.

WANTED — Hickok traceometer 155 man. or service sheets; 3KP4 pic. tube for Pilot 3" TV. State pr. H. H. Weaver, 2101 Washington Ave., Waco, Tex.

FOR SALE — Gonset FM car tuner (conv.), deluxe mod., like new cond. Make offer. Ralph Landers, 6446 Lexington Ave., Hollywood 38, Calif.

TRADE — Field strength meter Simpson 498A & 262 VOM for camera of equal value. Roy C. Ragan, 2700 Park St., Rolling Meadows, Ill.

FOR SALE — Electrovoice 3300 UHF conv. in fine cond. $10 plus ship. Ed's TV Service, 399 School St., Watertown 72, Massachusetts.

SELL OR TRADE — Have Heath EC-1 analog comp. excel. cond. Want good 5 band comm. rcvr in same cond. or make offer. George J. Rupp, 6009 Falkirk Rd., Baltimore 12, Md.

FOR SALE — Sams Photofacts, 1948-59 in filing cab.; 5" RCA WO91A scope; Precision E400 & E200 gen.; radio & TV tubes & parts; phono needles; tools, yokes, etc. Mrs. Regina Pyenson, Church Rd., Toms River, N. J.

SWAP — 5820 Image Orth tube, Simpson 240 VOM gd cond. Want old US coins also 1909-s, 1911-s, 1914-d, 1924-d, 1931-s Lincoln cents. Will pay 5c ea. for Indian head cents. G. Burns, 5009 Lovell, Ft. Worth, Texas.

FOR SALE — To highest bidder: perfect O-11 Heathkit 5 MC color TV scope; prof. wired; demodulator probe, never used. S. Calif. only. Ralph Landers, 6446 Lexington Ave., Hollywood 38, Calif.

FOR SALE — 60 Dumont tuners & 10 UHF, $13 ea; 25 VHF Boosters & 5 UHF conv., $5 ea. North End TV, 2527 Perrysville Ave., Pittsburgh 14, Pa.

TRADE — Eastman PSW short-wave port. diathermy, comp.; Hawkins Elec. Guides (Audel) comp. 10 vols., 1914; Refrigeration Service Engineer 1933 to 1937, in binders. For best offer or tape recorder. B. Hiller, Sr., 19423 Brady, Detroit 40, Michigan.

WANTED — Coils for old mod. HRO, state cond., freq., if they have band spread & pr. Stephen O. Kucera, 2105 McElderry St., Baltimore 5, Md.

FOR SALE — Hickok 534 dyn. mutual cond. tube tester with instr. man. in perf. cond. with up to date tube chart, $70. Bert Chahye, 5115 Elyria Ave., Lorain, Ohio.

FOR SALE — 3-speed Rek-O-Kut 16" turntable V-5, overhead Master-Pro M-5S, Presto 1-D cutting head. Leadscrews for all speeds & microgroove. Vy. gd. cond., $250 plus ship. Michael Borini, 210 W. 94 St., New York 25, N. Y.

FOR SALE — Stancor 25 mobile xmtr & Gonset tri-band conv., $50. Joseph Hellmann, 65-33 78th St., Middle Village 79, New York.

SWAP — Nearly new AF-67 xmtr with PS-2V pwr sup. & extra tubes — for Viking II & VFO. A. J. Filkins, Fly Creek, R 1, New York.

FOR SALE — QST: comp.: 1935, 36, 40, 53 thru 1959 incl.; partial 1931, 34, 37 to 39, 41, 1943 to 1945, total 172 issues. Also Handbooks 1934, 1935, $20 for all fob. C. F. Bale, 9 Simonson Pl., Staten Island 2, New York.

FOR SALE — Cabinets, dial glasses, tuners, other parts for Mallory TV-101 UHF converters, at bargain pr. James Fred, Russiaville, Indiana.

WANTED — Riders TV man. vols 11 & 13 in gd. cond. State pr. C. B. Dugger, Box 266, Athena, Oregon.

SELL OR TRADE — Hickok AM gen; McMurdo 906 gen.; Heath Sweep gen.; RCA 4-band airport rcvr.; Riders TV man; FM rcvr.; 15" speaker. Need HO equip., steping relays. Wilczynski, 3223 Unruh Ave., Phila. 49, Pa.

FOR SALE — For mobile radio servicing: Dumont 5890B freq. meter, batt. op., 24 chan., transistorized, 00025% accuracy. for 35.98, 45.58, 155.61 Mc; DuMont 5819A test meter with adaptor cables. Both almost new, $300. Robert Pieringer, Dogwood Lane, Alpine, N. J.

FOR SALE — Granco CTU UHF TV conv.; Simpson 215 VOM; Meissner 10-1156 13 tube comm. rcvr; Eicor 15v DC gas gen.; QST 49-59, Radio News 53-59, by yr., or set only. Best offer. R. H. Ives, R2-B32, Lynnhaven, Va.

WANT — Measurement Corp. M360 or 80R sig. gen. & Gertsch FM3 with or without DM1. State pr. & cond. Frank Schuch, 10101 S. Albany Ave., Evergreen Park 42, Illinois.

WANTED — Used Ferrograph, Roberts, Magnecord or equiv. monaural tape rec. for cash. Deck above OK if bargain. Harry Teder, 6151 N. Campbell, Chicago 45, Illinois.

SELL OR TRADE — TV test equip., tube caddy, tubes, RCA serv. course, TV books. Write for list & pr. Jesse B. Smith, 102 Waltham Lane, Oak Ridge, Tenn.

WANTED — Calibration book for Bendix Radio Corp. LMT freq. meter 2900 (can use other serials); Precision 230 multi bias supply. W. E. Schwenzer, 3619 Peach St., Erie, Pa.

FOR SALE — Tung-Sol 7JP4 Pix tube $15; Heathkit VTVM assemb. & in perf. cond., $16.50. Grayson Radio Electronics, 408 S. Linwood St., Gastonia, N. C.

WANTED — US School of Music organ course, for cash or trade parts or equip. A. Braun, Box 776, Ft. Wayne, Indiana.

SELL OR SWAP — Photofacts incomp. 4 to 310, 35-60c ea.; 100w class AB2 audio xformer with feedback windings, output from 84 to 500 ohms, $10. Donald Buck, 32 Ardmore Terr., Collingswood, N. J.

FOR SALE — Electro-Voice A15 Circlotron amp. like new, $35; McIntosh C104 preamp. $25; RCA AM-FM tuner MI-6787, $45; Lansing D131 speaker $30; BC-224B rcvr, 1.5-18.0 meg. $35 or best offer. Lenard Krauz, 2800 Camp Mabry Rd., Austin, Texas.

FOR SALE — RCP 808 comb. tube tester, CR tube tester, VTVM, ohmeter, with HV probe, cables, instr. book, vy. gd. cond., & sockets for all latest tubes. Make offer. Andy Anderson, 1114 Idaho St., Norman, Okla.

SWAP — HO Railroad complete, orig. cost $260. Need gd rcvr. Harold H. Trimble, R. 2, Box 168WA, Kilgore, Texas.

FOR SALE — BC-224-F 14v version of BC-348 not working but gd. for parts, $20. Garnet W. Frank, R. 1, Potsdam, N. Y.

SELL OR SWAP — Triplett 3212 tube checker $30; Precision 920 set & tube tester, $35, as is. Will exchange lists. Andrews, 139 E. Union Blvd., Bethlehem, Pa.

FOR SALE — Heath equip.: TC-2 tube checker, port. case, pic. adapter $25; V-6 VTVM, carrying case $18, T-3 sig. tracer $18; RS-1 resistance substit. box $2. All manuals & instr. Entire lot, $55 with Heath Applications Bul. in leatherette binder. Harry Register, 25-94 42nd St., Long Island City 3, N. Y.

FOR SALE — 17 CMV-1A RCA 152 mc. mob. units, comp. with cables, control head, antenna, all parts, all working, $25 ea.; 50 Link & Motorola 30-50mc FM mob. xmtrs comp. with tubes, $6 ea. Capitol Radio & Television, 7th & Walnut Sts., Lemoyne, Pa.

FOR SALE — Hickok 19XD sig. gen., Riders radio schem. vol. 10 & 11, PF Reporter, Radio & TV books, old stock radio tubes, Pop. Science, Pop. Mechanics & Mach. Illustrated, Wallaceaides Schem. T. Wojciecnowski, 2837 Fulton St., Brooklyn 7, New York.

FOR SALE — CIRE master course leading to first-class phone, vy. gd. cond., Incl. adv. TV train. course & slide rule. Best offer over $70. FOB. John D. Dabour, Jr., 104-61 123 St., Richmond Hill 19, N. Y.

WANTED — Commercial rcvrs and xmtrs & unused electron tubes. C. D. Gensler, 56 Crosby St., New York, N. Y.

CLOSING OUT — Port. 1960 Fujiya tape recorders in sealed factory cart., run also AC, with all acces., mike, reel, phone plug, ear phones, $59. Jack Fives, 2916 Rockrose Ave., Baltimore 15, Md.

FOR SALE — Collaro record changers: Conquest 4-speed $20; Masco 5 sta. master inter-coms, $12.50. Send for list of other bargains. Ed Galovic, 86 Egbert Rd., Bedford, Ohio.

WANTED — Sams sets or comp. set. Have Hickok 680 crystal marker gen. Make offer. J. E. Moser, R. 1, Lewisburg, Pa.

SELL OR SWAP — Masco MTB-13 & Anchor 10175 boosters; Philco 901 intercom. Want Eico 540 utility tester & Simpson 320, Eico 625K & Seco GCT-5 testers or any late model. Stubbs, c/o Radio-Elect. Rep. Serv., 140 S. 4th St., Reading, Pa.

WANTED — Bud VFO 21 coils for 10 & 15 mtrs. Cash or swap B&W inductors 10-20- 40 mtrs with BCL jack bar, TX splitstator cap 12 to 100 uufd 3000 v peak, 3½" RND mts 1- 1.5- 3- 200 DC ma. Antone Sylvia, 8 Mt. Vernon, St., Nantucket, Mass.

FOR SALE — VTVM & Eico and Sylvania scopes; Precise mutual conductance tube tester. Best Price. S. Gompers, 3 Channel Dr., Great Neck, Long Island, N. Y.

URGENT — Need pair Citizen band xcvrs, Ham gear, alternater, AC gen, 6v invert. to 110 AC 100w, tube tester. Cash waiting. S. Krzak, 65 Main St., Pawtucket, Rhode Island.

SWAP — Sig. gen. for old coins, as V-nickels, Indianhead pennies, quarters. All types of foreign coins. W. B. Jones, Carnesville, Ga.

SELL OR SWAP — Comp. NRI & D'Vry Radio & TV course less kits; Precision tube checker; comp. set Heath test equip. for shop; 1 to 400 Sams Photofacts; tech. manuals; tubes. Ray Pedone, 1721 E. Sycamore St., Anaheim, Calif.

FOR SALE — TV booster CT-1 astatic, like new, for best offer. Want— Modern Radio Servicing by Ghirardi. State pr. & cond. Phillip Haley, Box 21, Dunkirk, Ind.

SELL OR SWAP — DuMont RA 306 TV tuner, less tubes, $5; Books: Gen. Chem., $5, Automotive Trade Train. $3, Arc Welding $1.50, Hawkins Elec. Guide $2 etc. What do you need? Will swap for rec. tubes. Vincent Malack, 10530 Edbrooke Ave., Chicago 28, Ill.

WANT — Offers for 727 Silver Marshall, 10 tubes, 12" speaker, short wave & broadcast, world-wide recep. on short wave; also Emerson 7JS443 AC-DC, not working. Extra tubes for ea. set. Joseph Marsh, 194 Devon St., Kearny, N. J.

FOR SALE — 2 UHF conv. — Granco LC1 & Mallory like new $17.50 ea.; Jennings vac. cond. 50mmf. 20kv $7.50; World War II QST's 20c ea. Syd Jarvis, Jr., 20640 Sunrise Dr., Cupertino, Calif.

FOR SALE — Hi-Fi amp. 20w Williamson ultra linear with Acrosound type TO-300 output xfrmr & preamp (Heath W-2M & WA-P1), $50; Brush tape rec., gd. cond., $50. Package deal $90. Vincent Pellettieri, 5523-31 Ave., Woodside 77, L. I., N. Y.

WANTED — Measurements Corp. 65B RF gen. or equiv.: sig. gen. with Cal. RF output in microv., percent mod. at 400 cycles, acc. vernier freq. cont. reading to 1kc, range 50kc to 30mc or 60mc. Will sell Precision 200C & E400 like new or trade on same. Broad Radio, 4006 Central Ave., St. Petersburg, Fla.

SELL — Eico 360 sweep gen. $10, MB40SL $8, Leece Neville rect. 12v 50a $15. Want old HRO/RAS coils, Military, National or Hammarlund rcvrs, AR88. Art Ford, 85 Franklin, Northport, N. Y.

SELL — Kw (p. 211 '59 Handbook) with Variac cont. sup. & 4kw xfrmr; 2M conv. $12; Electro Voice 15 TRX in Regency with Stancar Williamson amp. & preamp. National Binaural tuner, $330. A West, 17 Parkway, Riverdale, N. J.

FOR SALE — Hallicrafters 810 17" table TV; RCA 630 conversion with 24" CRT, no cabinet. Both working, $12 ea, $20 both. Local only. H. Barton, Brookside Acres, Woodstock, N. Y.

FOR SALE — Eico 221 VTVM, vy gd cond., comp. with leads & HV probe. $20 cash or best offer. Ship anywhere. R. E. Pierce, 85 Cross St., Central Falls, R. I.

FOR SALE — Vomax 900, Needs service; Heathkit RF SG-8 sig. gen.. as new. Both for $20 MO. Hendrix, 8947 E. Oklahoma St., Tulsa, Okla.

WANTED — 2 & 6 meter rcvr. Have Heath V6-VTVM, Regency TV converter & 2-50 tubes for sale or trade. W. E. Fuller, R. 1, Dimondale, Mich.

WANTED, Heathkit: DX-40 xmitr, OL-1 3" scope, VF-1 VFO, in gd oper. cond. Howard M. Howell, 6851 Crawfordsville Rd., Indianapolis 24, Ind.

WANTED — Supreme gen. 561 or 666. Have Supreme Oscillator 571; Heathkit CT1, Precision Electronics 251A sig. tracer, & grid dip meter GD-1B. Charles S. Alexander, 77 Oswegatchie Rd., Waterford, Connecticut.

SELL OR TRADE — Heath GD-1B grid-dip meter comp. with coils & AM-1 ant. impedance bridge with manuals. Want AM-FM or FM tuner. Robert Camp, 1042 Water St., Moosic 7, Pa.

WANTED — Regency TCR-2B transistor rcvr in A-1 cond. for cash or? H. L. Anderson, 104 Ocean Ave., New London, Connecticut.

SELL OR SWAP — Babcock 3 chan. xmtr & rcvr in model of 95' Coast Guard cutter by Sterling. Used 1 hr. Want 2 or 6 meter ham gear or Citizens band. G. Rowse, 85 Robinson Ave., Pawtucket, R. I.

SELL OR TRADE — Set of radio & TV books, 6 vols., by Coyne; Basic TV by Grob, like new for $15 or what have you? Frank Wurst, 242 Dayton Ave., Clifton, N. J.

WANTED — Sams Photofacts 394 thru 475. Will pay $1.00 ea. plus postage—1 or 82. State set nos. Charles C. Hunt, Box 31 Calhoun, Ga.

WANTED — Info. about Peirce Wire recorder Corp., Evanston, Ill. or their 260, ser. 12981, made for the military. Joseph W. Botwinick, 30-47 83 St., Jackson Heights 70, N. Y.

SELL OR TRADE — GE YGA-2, sine sq. wave gen., seldom used, $10 or trade for Heathkit CT-1 in-circuit capaci-tester, Arthur Waldbusser, 490 Linwood St., Brooklyn 8, N. Y.

FOR SALE — Radio, TV Repair Shop, comp., est. 7 yrs., Greenwich Vil. loc. Webb Radio, 1 Horatio St., N.Y. 14, N.Y.

FOR SALE — Parts assortment for TV & electronics experimenter, $5 & $10 plus post.; 30 knobs $1. Ace TV, 5341 Cordelia Ave., Baltimore 15, Md.

FOR SALE — Tone arm, Garrard TPA10 prof. model, adjustable, like new, $10. R. B. Mouw, 5118 Miles Ave., Oakland 18, California.

FOR SALE — B. K.: 1075 analyst, A107 dyna-sweep cir. analyzer, CRT 400 tester & rejuvenator, tube tester 500-all adaptors;Eico 425 scope; Simpson 260 VOM. All items yr. or less old & in A-1 cond. Make offer. F. Greenleaf, 46 Spring St., Pittsfield, Mass.

FOR SALE — One 4-400A & two 4X250B in fine cond., $100 plus post. Jane P. Burroughs, 86 Green St., Worcester, Mass.

WANTED — Instr. manual for Hickok 505 scope. John Follmer, 41 Highland Ave., Little Falls, N.Y.

WANTED — Universal loud speaker with 25w driver comp. with bracket, reasonably priced. Bob's Radio & TV Service, Box 37, Wabasso, Fla.

WANTED — Paco test equip., UMC & Motorola auto 12v radios. O. Zetlmeier, 1123 Woodycrest Ave., New York 52, N.Y.

FOR SALE — Knight: FM tuner, $35, 18w Hi-Fi ampl, $39 & 10w with cage $29, all like new; Heath WA-P2 preamp. $14 & W-5A 25w pwr amp., gd cond. $55; BC-458 converted xmtr, 40 meters, $10. Victor Wong 430 Southview Ave., Cin. 19, Ohio.

FOR SALE — 27 issues Service, Jan. 1956 to March 1958; 17 issues Electronics Ill., July 1958 to Dec. 1959, other electronic tech books, parts. Send stamped self-add. env. for list. W. L. Jesson, 25 Pine St., Geneva, N. Y.

FOR SALE — 3 steel rack cabinets: 8¾ x 19, $6; 17½ x 19, $10; 35 x 19, $13; BC624-A 2mtr rcvr, partly mod. with tubes, $6; 2 old car radios, $4 ea. Clifford Anderson, 125 E Saddle River Rd. Saddle River, N.Y.

WANTED — Xtal sets of early 1920's, not home brew, antique one-tube rcvrs of early 20's, Navy type rcvr, RAL-8, 3-23 MC, old copies Radio Experimenter. Raymond Fisher, 627 Fallowfield Ave., Charleroi, Pa.

WANTED — Pwr xfrmr, also 120.000 ohm candohm unit, for CF solar condenser analyzer. Wade's Radio & TV, Hilliard, Florida.

FOR SALE — 15 yrs accumulation of ham & commercial parts, tubes, test gear, etc. Send for list. H. Dinkey, 25 Prospect St., Newark 5, N. J.

FOR SALE — Radio-TV corr. course with kits, plus color course in gd. cond. Frank A. Corrente, 174 McLean Ave., Yonkers, New York.

WANTED — Within 50 mi. of Canton, HQ-129X or similar used rcvr. Douglas Angerman, 8225 Blough Dr., Navarre, Ohio.

FOR SALE — National Radio SW-54, used very little & in gd. cond. $45. Ship anywhere in US. Robert C. Gulledge, Southern Pine Express, Granite Quarry, North Carolina.

WANTED — NRI Radio-TV serv course, less kits. Norris C. McKamey, 1220 W. 7th St., Davenport, Iowa.

FOR SALE — Excellent 75A4 late ser. no., hardly used $500. S. Zucker, 104 Waldo Ave., Jersey City, N. J.

SELL OR SWAP — $600 of parts for 500w CW rig, VFO, many extras & $75 never used parts. Take $100 cash or swap for 10" table saw, 6" jointer, or a garden tractor. Jim Sayer, 2608 Cherry St., Bakersfield, Calif.

FOR SALE — Electronic design VTVM like new $20; Approved Electronic Ins. Corp, cross hatch gen. $30; Precision EV20 VTVM like new with instr. $30. Lawrence E. Heath, Mechanicsville, Va.

WANTED — Instruction manual for A-400 sweep sig. gen. made by Approved Electronic Inst. Corp. Will buy, rent or borrow. C. Servais, 4774 Falmouth, Kansas City 3, Kansas.

WANTED — Short wave rcvr, prefer Collins, Hammerlund or Hallicrafter. Cash or trade 16mm sound projector. Also want stereo tape deck. A. Lux, 5424 Hutchinson St., Chicago, Ill.

FOR SALE — Central Electronics 20A SSB exciter, used 10 hrs., with VFO kit, $195; Johnson Courier Kit, still in crate, $200; National NC-173 with never installed Central Electronics B slicer, $150. Gonset super-six conv. like new, $35. Bob Owens, 1018 SW DeSale St., Vienna, Virginia.

WANTED — Carrier level meter for Hallicrafters SX-42 (pt. no. 82-B-100) in working cond. State pr. & cond. P. G. Neide, 27698 Fullerwood Dr., Clev. 32, Ohio.

FOR SALE — Gonset super-six conv. $25; Astatic AT-1 TV booster $10; Heath TS1A TV gen. $15; Steky 16mm min. camera $10; Honewell pwr transistors H6 $5 pr or trade for comm. rcvr S-40, SX28, etc. Louis Venturelli, 131-14 131st St., S. Ozone Park 20, N.Y.

FOR SALE — Two Emerson 1178 tuners, gd. cond. $10 ea.; Radio-TV course, National Schools, no kits, $30; 3 12" field coil speakers with xfmer $4 ea., LM-5 talk-a-phone intercom with one station $15; old type tubes. William A. Booth, Phelps, Ky.

FOR SALE — Unused Hickok 800 tube checker, orig carton, warranty, $125. E. S. Priem, 1104 Seagle Bldg., Gainsville, Florida.

FOR SALE — Riders vols. 3 thru 21, gd. to new cond. Best offer for entire lot. O. R. Gano, 1104 Seagle Bldg., Gainesville, Florida.

TRADE — Box of 100 IF, AF & RF coils in cans from auto radios, AC-DC's & older radios, for Simpson or equiv VOM & a VTVM in working cond. Make offer. C.W. Bentley, Bx 236, Talent, Ore.

FOR SALE Sound 16 proj, Eastman Kodak, 2 speakers, $145; 3¼ x 3¼ glass slide 500w projector with slides on Ireland. P. Calderaro, 652 Main St., Wakefield, Massachusetts.

SELL OR SWAP — Three tube six meter converter in vy. gd. cond. Need LW-51 6 mtr trans. Will pay cash. Mike Vinocur, 1776 E. 13 St., Brooklyn 29, N. Y.

FOR SALE — Triplett 625NA, VOAM $30 & Hickok 4956 VOAM $25. Both in fine cond. Leroy Singer, 4 Atwood Rd., Plainview, New York.

FOR SALE — Precision E-200 sig. gen. with output cable & instr. book Servicing by Signal Substitution, $40. Wm. Lazarczyk, 128 E. 2nd St., Dunkirk, N. Y.

WANTED — 1183-SC comb. tube tester, B & K TV analyst, Scott rcvr, Heath equip., Johnson outboard RD 17C, Parts Manual. E. Cardona, Apenios 633, Puerto Nuevo, Puerto Rico.

WANTED — Used xmtr RCA-ACT 150, Harvey 700R or Temco 600. Also instr. book for Navy rcvr RBM4 (2-18MC). George Leininger, 16412 Marquis Ave., Cleveland 11, Ohio.

WANTED for cash — VHF & UHF xmtrs, converters, ant., tubes. No surplus unless converted to 110v AC. W. M. McDonald, 25A Crescent St., Lawrence, Massachusetts.

WANTED — Hallicrafter SX-100, SX-101, HT 32A & 33A, & 500-1000w AM or SSB xmtr for cash. A. Haberman, 129 Morgan St., Holyoke, Mass.

FOR SALE — Fada radio ser. no. 135766, original leads for batteries, orig. instr. no speaker, cabinet in gd. cond. Make offer. R. C. Michaels, 1282 Summit Ave., Lakewood 7, Ohio.

SELL OR SWAP — DuMont cont. 21mc TV tuner; Jensen 8" extended range speaker; mike Electro-Voice 915 with 6" desk stand, all chrome; port. batt. radio, Westinghouse H-414P4 with case. Want sig. gen. Charles K. Gabler, 1307 Merriam Ave., New York 52, N. Y.

TRADE — DuMont 5" scope in excel. cond. with manual for gd. tape recorder. Kenneth Miller 10027 Calvin St., Pgh. 35, Pa.

SELL OR SWAP — Transistor curves, text books, mags. Leo H. DeZube, 7500 W. 92nd St., Los Angeles 45, Calif.

URGENTLY WANTED — Electrical Experimenter, Wireless Age & full yr. QST for 1916. Also ARRL pub. Calling CQ by Clinton Desoto. All offers ans. Jones, 713 Front St., Catasauqua, Pa.

WANTED — RCA Radio-Electronics course self-study calculus, speed read. Pharse-O-Scope. Sell — Regency UHF conv., Daisy BB rifle & pistol. Sidney Gross, Bx 190, Port Washington, N.Y.

FOR SALE — Precise 300w 7" scope, factory calibrated l. n., RCA sig. gen., mimeo. machine. J. Maugeri, 166-75 22 Ave., Flushing L. I., N.Y.

FOR SALE — Riders radio mans. 8-15 incl., best of cond. $24 plus ship. F. A. McGonigle, 224 Florence Ave., Wilmington 3, Delaware.

WANTED — Used Hi-Fi & sound equip. Send compl. info. & pr. Also want prof. type tape recorder. Cape Cod Sound Service, Box 395, Hyannis, Mass.

FOR SALE — 2.5v AC pwr pack for orig. Nat'l SW3 with 2.5 tubes, working. Collector's item. M. F. Kelley, Bolton Landing, New York.

URGENTLY NEEDED — Adapters & instr. for Supreme 599A tube tester. Don Wasserman, 102-H Brookside Ave., New Haven, Connecticut.

FOR SALE — Harvey Wells 50w xmtr TBS 50 D, $40. No swap. Herbert Spilger, Cardinal Lane, Monsey, N.Y.

SELL OR TRADE — Unused $200 16" disc recorder with playback arm, 33-78 rpm, cuts either outside-in or inside-out, 19" cast baseboard, made for prof. use, 70 blank discs incl. Make offer. Robert Townsley, 5939 Almaden Lane, Oakland 11, California.

SELL OR TRADE — Two TV sets, good; 30w amp. Revere sound proj. like new; Lynn elec. radiator, perf. All kinds of rare phono rec.; business cards. What have you? Fred Simonian, 25 Smith St., Lynn, Mass.

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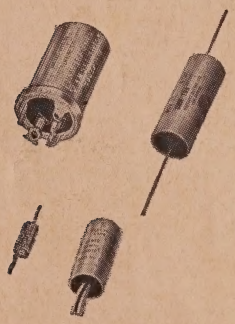

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